

REMARKS

In the Office Action, dated October 5, 2005, the Examiner rejected claims 1-3 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4-6 and 9 of U.S. Patent No. 6,762,448 (hereinafter "LIN"). The Examiner further rejected claims 1-5 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Application Publication US 2005/0073060 (hereinafter "DATTA"). The Examiner also rejected claims 15-19 under 35 U.S.C. § 103(a) as allegedly being unpatentable over DATTA.

By way of this amendment, Applicants have amended claims 1 and 15 to improve form. Claims 6-14 have been canceled without prejudice or disclaimer. New claims 20-22 have been added. No new matter has been added by the present amendment. Reconsideration of the outstanding rejections is respectfully requested in view of the amendments above and the following remarks.

Applicants note that an Information Disclosure Statement (IDS) was filed on October 12, 2005, subsequent to the mailing date of the present Office Action. Applicants request that an initialed copy of the 1449 that accompanied the IDS be returned along with any subsequent communication from the Examiner.

On page 2, the Office Action rejects claims 1-3 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4-6 and 9 of LIN. The Office Action asserts that, "[a]lthough the conflicting claims are not identical, they are not patentably distinct from each other because the claimed device is shown in the patented claims." The Office Action further asserts that claims 1 and 3 of the present application correspond to claims 1, 5 and 9 of LIN, and claim 2 of the present application corresponds to claims 2, 4 and 6

of LIN. Applicants respectfully submit that claims 1-3 are patentably distinct over claims 1, 2, 4-6 and 9 of LIN.

Amended independent claim 1 recites a semiconductor device that includes “a plurality of fin structures comprising a crystalline silicon material formed from amorphous silicon using metal-induced crystallization (MIC),” “a source region formed at one end of the fin structures,” “a drain region formed at an opposite end of the fin structures” and “at least one gate.” By comparison, claim 1 of LIN recites a semiconductor device that includes “a first fin structure comprising a dielectric material and including a first side surface and a second side surface,” “a second fin structure comprising a single-crystal silicon material and being formed adjacent to the first side surface of the first fin structure,” “a third fin structure comprising the single-crystal silicon material and being formed adjacent to the second side surface of the first fin structure,” “a source region formed at one end of the first fin structure, the second fin structure, and the third fin structure,” “a drain region formed at an opposite end of the first fin structure, the second fin structure, and the third fin structure” and “at least one gate.” As is apparent when comparing the claims, claim 1 of the present application recites, among other features, “a plurality of fin structures comprising a crystalline silicon material formed from amorphous silicon using metal-induced crystallization (MIC)” that is not recited in claim 1 of LIN. Claim 1 of the present application is, therefore, patentably distinct from claim 1 of LIN.

The above-noted feature of claim 1 of the present application is further not recited in claims 2, 4-6 and 9 of LIN. Claim 1 of the present application is, therefore, patentably distinct from claims 2, 4-6 and 9 of LIN. Claims 2 and 3 of the present application depend from claim 1

and, therefore, these claims are patentably distinct from claims 1, 2, 4-6 and 9 of LIN for at least the reasons set forth above with respect to claim 1.

Since claims 1-3 of the present application are patentably distinct over claims 2, 4-6 and 9 of LIN, Applicants respectfully request withdrawal of the rejection of claims 1-3 under the judicially created doctrine of obviousness-type double patenting.

In paragraph 2, the Office Action rejects claims 1-5 under 35 U.S.C. §102(e) as allegedly being anticipated by DATTA. Applicants respectfully traverse.

Amended independent claim 1 recites a semiconductor device that includes “a plurality of fin structures comprising a crystalline silicon material formed from amorphous silicon using metal-induced crystallization (MIC),” “a source region formed at one end of the fin structures,” “a drain region formed at an opposite end of the fin structures” and “at least one gate.”

A proper rejection under 35 U.S.C. § 102 requires that a reference teach every aspect of the claimed invention. See M.P.E.P. § 2131. DATTA does not disclose or suggest the combination of features recited in Applicants’ amended claim 1.

For example, DATTA does not disclose or suggest, among other features, “a plurality of fin structures comprising a crystalline silicon material formed from amorphous silicon using metal-induced crystallization (MIC),” as recited in claim 1. The Office Action (pg. 3) cites to the fins 410 of DATTA as allegedly disclosing the fin features recited in claim 1. As shown in FIG. 5, and disclosed in paragraph [0025] of DATTA, the two fins 410 each comprise a “semiconductor fin.” DATTA however, does not disclose, or even suggest, that fins 410 comprise “a crystalline silicon material formed from amorphous silicon using metal-induced

crystallization (MIC),” as recited in amended claim 1. Since DATTA does not disclose each and every feature of amended claim 1, DATTA cannot anticipate claim 1. Withdrawal of the rejection of claim 1 is, therefore, respectfully requested.

Claims 2-5 depend from claim 1. These claims, therefore, patentably distinguish over DATTA for at least the reasons set forth above with respect to claim 1.

In paragraph 4, the Office Action rejects claims 15-19 under 35 U.S.C. § 103(a) as allegedly being unpatentable over DATTA. Applicants respectfully traverse.

Amended independent claim 15 recites a semiconductor device that includes “a substrate,” “a plurality of crystalline silicon fin structures formed on the substrate from amorphous silicon using metal-induced crystallization (MIC), a center-to-center distance between each of the fin structures being about 600 Å,” “a source region formed at one end of the fin structures,” “a drain region formed at an opposite end of the fin structures” and “one or more gates.”

In rejecting claim 15, the Office Action alleges that DATTA discloses all of the features of the claim, except the center-to-center distance between each of the fin structures being about 600 Angstroms. The Office Action, however, alleges that this distance range would have been obvious to an ordinary artisan practicing the invention. Applicants submit, though, that the Office Action’s allegation of obviousness with respect to the center-to-center distance does not disclose or suggest “a plurality of crystalline silicon fin structures formed on the substrate from amorphous silicon using metal-induced crystallization (MIC),” recited in amended claim 15. As discussed above with respect to claim 1, DATTA merely disclose two fins 410 that comprise a

semiconductor material. DATTA does not disclose fins “formed on the substrate from amorphous silicon using metal-induced crystallization (MIC),” as recited in amended claim 15, and the Office Action’s allegation of obviousness with respect to the center-to-center distance does not remedy this deficiency in the disclosure of DATTA. Since neither DATTA, nor the Office Action’s allegation of obvious, discloses or suggests the combination of features recited in amended claim 15, Applicants respectfully request that the rejection of claim 15 under 35 U.S.C. § 103(a) be withdrawn.

Claims 16-19 depend from claim 15. Withdrawal of the rejection of these claims is respectfully requested for at least the reasons set forth above with respect to claim 15.

New claims 20-22 recite a semiconductor structure that includes “a plurality of fins formed on a substrate from amorphous silicon” and “a metal layer formed on surfaces of the plurality of fins, wherein the metal layer is annealed to diffuse the metal layer into the amorphous silicon and convert the amorphous silicon to crystalline silicon.” As discussed above with respect to claim 1, DATTA merely discloses a device with two fins consisting of a semiconductor material. DATTA does not disclose or suggest fins formed from amorphous silicon and “a metal layer formed on surfaces of the plurality of fins, wherein the metal layer is annealed to diffuse the metal layer into the amorphous silicon and convert the amorphous silicon to crystalline silicon,” as recited in claims 20-22. Claims 20-22, therefore, patentably distinguish over DATTA.

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of this application, and the timely allowance of the pending claims. To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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